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is necessary to use more complicated procedure. For example, the normal human lung hardened in alcohol and prepared as above, will perhaps admit of sections of 0.030$^{mm;}$ a human lung affected by acute pneumonia may perhaps be cut to 0.015^{mm,} but if greater delicacy is required, the tissue must be soaked in gum arabic, or other substance which admits of a more solid hardening. In this case human lung will allow of sections down to 0.001$^{mm.}$ Objects of very small dimensions, like embryos, small animals, leaves of plants, &c., must be imbedded in suitable masses, which may be adapted to a cork, as above, before they are cut.—[*To be continued.*]

SCIENTIFIC NEWS.

— In closing his second lecture on whales Professor Flower argues against the theory of the derivation of the whales from the Carnivora, and the idea that whales are an extreme modification of the seals and sea-lion, calling attention to the fact that the hind-limbs are aborted and the tail developed into a powerful swimming organ. He thinks it more reasonable to suppose that whales were derived from animals with large tails, which were used in swimming, eventually with such effect that the hind limbs became no longer necessary, and so gradually disappeared. "The powerful tail, with lateral cutaneous flanges, of an American species of otter (*Pteronura sandbachii*), or the still more familiar tail of the beaver, may give some idea of this member in the primitive Cetacea." He therefore suggests the derivation of whales from the lower Ungulates, and that the earliest forms were fresh-water types; the fresh-water origin of the group accounting for their otherwise inexplicable absence from the Cretaceous seas.

— The Chinese and Japanese exhibits at the International Fisheries exhibition must be novel and striking. An article in *Nature* calls attention to the extraordinary ingenuity displayed in utilizing the most ordinary and unpromising objects for the purpose of fishing. Thus in Swatow they employ a boat drawing a few inches of water, with the rail nearly level with the surface. A narrow plank fixed along one side is painted white, and the light of the moon falling on it causes the fish to mistake it for water. They jump over the plank into the boat, when they get entangled in moss or grass. At Ichang, a wild animal, such as the otter, is trained, not to catch fish, but to frighten them into the net; while at Ningpo cormorants are regularly and systematically trained to fish. These and many other devices shown at the exhibition mark the Chinese as the most ingenious and accomplished fishermen in the world.

— In his notice of MM. Carl Vogt and Emil Yung's treatise on practical Comparative Anatomy, Quatrefages stated before the French Academy that for Darwin's biological tree, representing all life past, present and even future on the globe, Vogt and Yung substitute a grove composed of many distinct trees, the number and species of which still remain to be determined. "But," he adds, "while this conception deprives the Darwinian theory of much of its seductive grandeur, evolution itself can lose nothing by abandoning an absolute system in which mere hypothesis plays far too large a part."

— Still a new zoölogical journal has been started in Germany. The first number of the *Zoologische Beiträge*, edited by Professor Anton Schneider, of Breslau, contains articles on the development of *Sphærularia bombi*, by A. Schneider; on the anatomy of Nematodes, by E. Rohde; on the anatomy and histology of Peripatus, by E. Gaffron; on the reproductive process in bony fishes, by A. Schneider; and on the development of the sexual organs of insects, by A. Schneider.

— As we are about going to press the American Association begins (Aug. 15) its annual session in Minneapolis, one of the most beautiful cities of the West. President Dawson was to deliver the retiring address, while the meeting will be presided over by Professor C. A. Young. In the same week and place (Aug. 13–14), the Society for the Promotion of Agricultural Science was to meet, and (Aug. 14) the Cambridge Entomological Club was to hold a public meeting.

— Several apparently new destructive insect pests, besides the Phylloxera have made their appearance in California; one is the peach moth (*Anarsia lineatella*). It was first noticed in 1882, but during the past summer has spread to an alarming extent. Mr. M. Cooke also reports that the branches of the olive are bored by a beetle, *Polycaon confertus;* it also infests the branches of the pear, cherry, apricot, plum, apple trees and grape canes.

— The library, laboratory and museum of Indiana University at Bloomington, was recently burned, involving the loss of the Owen collection of fossils, and Professor Jordan's extensive collection of fishes. Professor Jordan's work on the fishes of the United States, has recently been published by the Smithsonian Institution, and the collection formed a part of his types.

— We have received a catalogue of books and papers relating to the fertilization of flowers, compiled by D'Arcy W. Thompson, and extracted from the English edition of Dr. Hermann Müller's Fertilization of Flowers. The number of entries is 814, and those of American authors appear to have been carefully recorded.

— The sixth annual meeting of the American Society of Microscopists was to be held in Chicago, beginning Aug. 7 and continuing four days.

— We have, for lack of space, failed to notice several recent geological papers of interest. These are Mr. G. K. Gilbert's Contributions to the History of Lake Bonneville, extracted from the annual report of the Director of the U. S. Geological Survey, 1880–81. It is finely illustrated and gives the results of several seasons' explorations. Professor W. M. Davis publishes in the Bulletin of the Museum of Comparative Zoölogy, Vol. VII, a well illustrated paper on the relations of the Triassic traps and sandstones of the Eastern United States; also a second paper on the folded Helderberg limestones east of the Catskills, with numerous diagrams.

— A monument to the memory of the celebrated naturalist and physio-philosopher, Oken, has been erected at Offenburg. Visitors to the University grounds at Jena will remember seeing his bust there, which has been on exhibition for many years.

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PROCEEDINGS OF SCIENTIFIC SOCIETIES.

PHILADELPHIA ACADEMY OF NATURAL SCIENCES, April 5.—Mr. Cresson exhibited some Aztec flageolets and whistles, and proved that by closing the bell of the flageolets with the little finger the entire octave could be produced. Each whistle was correctly pitched, and a series gave a complete octave, together with the ninth, eleventh, and twelfth. Mr. Cresson argued from these facts that the Aztecs were acquainted with the full musical scale, instead of being limited to the pentatonic scale, as has usually been believed to be the case with them and other barbarous nations. In the comparison of these instruments with the Boehm flute he was assisted by Professor J. S. Cox. Mr. Cresson also stated that he had examined the construction of these flageolets, and had endeavored to imitate it. He had reason to believe that the instrument was formed of four parts, the mouth-piece, the reed, the body, and the bell. Professor Lewis objected that though the entire scale can be produced by a skillful modern performer from a four-holed instrument, this did not prove that those who made the instrument possessed the skill and knowledge to produce it. Mr. Skinner showed some cocoons of the Cecropia moth gathered from the elder. Those taken from near the base of the shrub were of stouter form than those gathered from higher up, and always proved to be females, while the slimmer cocoons found on the higher branches always turned to male.

April 12.—Professor E. D. Cope gave particulars of recent palæontological discoveries in Brazil. Brazil consisted of two